

WHAT IS CLAIMED IS:

1. An isolated nucleic acid molecule, comprising

(a) a nucleotide sequence selected from the group consisting of SEQ ID NOs:

5 1-17;

(b) a nucleotide sequence which is the complement of (a);

(c) a nucleotide sequence which has an identity of at least 80% to a sequence
of (a) or (b); or

(d) a nucleotide sequence which hybridizes under stringent conditions to a
10 sequence of (a), (b) or (c),

wherein the nucleic acid molecule was isolated from human embryonic stem
cells.

2. The nucleic acid molecule of claim 1, wherein the nucleic acid molecule is a
15 miRNA molecule or an analog thereof.

3. The nucleic acid molecule of claim 1, wherein the nucleic acid molecule is a
miRNA precursor molecule.

20 4. The nucleic acid molecule of claim 3, wherein the nucleic acid molecule has a
nucleotide sequence selected from the group consisting of SEQ ID NOs: 84-99.

5. A vector comprising the nucleic acid molecule of claim 1.

25 6. A pharmaceutical composition comprising the nucleic acid molecule of claim 1

as an effective component.

7. The pharmaceutical composition of claim 6, which is for diagnostic applications.

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8. The pharmaceutical composition of claim 6, which is for therapeutic applications.

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9. A marker specific to a human stem cell, comprising the nucleic acid molecule of claim 1.

10. The marker of claim 9, wherein the human stem cell is any one selected from the group consisting of embryonic stem cell, embryonic carcinoma stem cell and adult neural stem cell.

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11. The marker of claim 9, wherein the human stem cell is an undifferentiated embryonic stem cell.

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12. The marker of claim 11, wherein the marker has a nucleotide sequence selected from the group consisting of SEQ ID NOs: 1-10 and SEQ ID NOs: 13-16.

13. A method for determining the differentiation of human stem cells, comprising the steps of:

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(a) preparing a RNA sample from the stem cells; and

(b) detecting the expression of a nucleic acid molecule having a nucleotide sequence selected from the group consisting of SEQ ID NOs: 1-10 and SEQ ID NOs: 13-16, in the prepared RNA sample.

5 14. A method for determining the type of stem cells, comprising the steps of:

- (a) preparing a RNA sample from the stem cells; and
- (b) detecting the expression of a nucleic acid molecule having a nucleotide sequence selected from the group consisting of SEQ ID NOs: 1-10 and SEQ ID NOs: 13-16, in the prepared RNA sample.

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